(FILE 'HOME' ENTERED AT 11:16:34 ON 26 JUN 2003)

FILE 'MEDLINE, AGRICOLA, CANCERLIT, SCISEARCH, CAPLUS, MEDICONF' ENTERED AT 11:16:44 ON 26 JUN 2003

```
L1          62 S (TIAP OR XIAP) (L) ANTIBOD?
L2          21 DUP REM L1 (41 DUPLICATES REMOVED)
L3          21 FOCUS L2 1-
L4           0 S L3 AND PY<=1998
L5           7 S (BIR DOMAIN) (L) ANTIBOD?
L6           5 DUP REM L5 (2 DUPLICATES REMOVED)
L7          25 S ANTI-IAP ANTIBODY
L8          12 DUP REM L7 (13 DUPLICATES REMOVED)
L9          12 SORT L8 PY
L10         35 S (INHIBITOR OF APOPTOSIS PROTEINS) (L) ANTIBOD?
L11         18 DUP REM L10 (17 DUPLICATES REMOVED)
L12         18 SORT L11 PY
L13         91 S (INHIBITOR OF APOPTOSIS PROTEINS) (L) BIND?
L14         41 DUP REM L13 (50 DUPLICATES REMOVED)
L15          4 S L14 AND PY<=1998
L16          4 SORT L15 PY
L17         26 S TIAP (L) APOPTOSIS
L18         12 DUP REM L17 (14 DUPLICATES REMOVED)
L19         12 SORT L18 PY
```

=> d an ti so au ab pi l19 7 6 8 4 9 1

L19 ANSWER 7 OF 12 CAPLUS COPYRIGHT 2003 ACS
AN 2001:916377 CAPLUS
DN 136:48811
TI Methods and compounds for modulating male fertility
SO U.S., 29 pp.
CODEN: USXXAM
IN Korneluk, Robert G.; Lagace, Mark
AB The invention features novel methods and reagents useful for the treatment of excessive or insufficient **apoptosis** in cells, and, particularly, in germ-line cells. The invention is useful in treating testicular cancers, cancers of germ-line cells, cancers in non-germ-line cell tissues, infertility (e.g., male infertility), and for birth control (e.g., male birth control). The invention features a substantially pure nucleic acid mol. encoding a **TIAP** (testis specific inhibitor of **apoptosis**) polypeptide. The treatment methods of the invention involve using the nucleic acid or **TIAP** polypeptide.

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI US 6331412	B1	20011218	US 1999-239867	19990129
US 2002086409	A1	20020704	US 2001-24433	20011218

L19 ANSWER 6 OF 12 MEDLINE
AN 2001166024 MEDLINE
TI A novel homologue of the TIAP/m-survivin gene.
SO BIOCHEMICAL AND BIOPHYSICAL RESEARCH COMMUNICATIONS, (2001 Mar 23) 282 (1) 207-11.
Journal code: 0372516. ISSN: 0006-291X.
AU Ogasawara T; Hatano M; Otaki M; Sekita N; Kobayashi K; Miyazaki M; Nakajima N; Tokuhisa T
AB The inhibitor of **apoptosis** (IAP) proteins comprise a highly conserved gene family that prevents cell death in response to a variety of stimuli. **TIAP**/m-survivin, a murine homologue of human Survivin, is a member of the IAP family. **TIAP**/m-survivin has one baculovirus IAP repeat (BIR) and lacks a C-terminal RING finger motif. Here we identified the genomic DNA region (**TIAP**-2) that is homologous to the **TIAP**/m-survivin gene by a low stringency genomic DNA hybridization. The region is on the chromomsome 9 which is distinct from that (chromosome 11) of the **TIAP**/m-survivin gene, and contains DNA sequence similar to a part of the BIR and the 3' side of the **TIAP**/m-survivin gene and the sequence homology between them is 92%. Expression of **TIAP**-2 mRNA was detected in various murine tissues by RT-PCR. Although expression of **TIAP** /m-survivin mRNA is upregulated in synchronized cells at S to G2/M phase

of the cell cycle, expression of **TIAP**-2 mRNA was constant in the cell cycle, suggesting the different role of **TIAP**-2 from that of **TIAP**/m-survivin.

L19 ANSWER 8 OF 12 CAPLUS COPYRIGHT 2003 ACS
AN 2001:25702 CAPLUS
DN 134:96296
TI Sequences of novel internal ribosome entry sites (IRES) of human and mouse X-linked inhibitor of apoptosis (XIAP) and uses thereof in modulating cap-independent translation
SO U.S., 35 pp., Cont.-in-part of U.S. Ser. No. 121,979.
CODEN: USXXAM
IN Korneluk, Robert G.; Holcik, Martin; Liston, Peter
AB The invention features purified nucleic acid encoding a novel internal ribosome entry site (IRES) sequence from the human and mouse X-linked inhibitor of apoptosis (XIAP) gene. The invention also features methods for using the XIAP IRES to increase cap-independent translation of polypeptide coding sequences linked to the XIAP IRES, and methods for isolating compds. that modulate cap-independent translation.

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI US 6171821	B1	20010109	US 1999-332319	19990614
US 6159709	A	20001212	US 1998-121979	19980724
CA 2336707	AA	20000203	CA 1999-2336707	19990722
WO 2000005366	A2	20000203	WO 1999-IB1415	19990722
WO 2000005366	A3	20000615		
W: CA, JP, US				
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
EP 1100900	A2	20010523	EP 1999-935002	19990722
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				

L19 ANSWER 4 OF 12 CAPLUS COPYRIGHT 2003 ACS
AN 2000:84982 CAPLUS
DN 132:133245
TI An internal ribosome entry site from the X-linked inhibitor of apoptosis gene and its uses
SO PCT Int. Appl., 87 pp.
CODEN: PIXXD2
IN Korneluk, Robert G.; Holcik, Martin; Liston, Peter
AB A novel internal ribosome entry site (IRES) sequence from the X-linked inhibitor of apoptosis (XIAP) gene is identified and characterized. The invention also features methods for using the XIAP IRES to increase cap-independent translation of polypeptide coding sequences linked to the XIAP IRES, and methods for isolating compds. that modulate cap-independent translation. The IRES was identified in the very long 5'-UTR of the XIAP gene by function. Cap-independent initiation of translation from the IRES was demonstrated by resistance of expression of the downstream gene to inhibition by poliovirus protease 2A. The IRES could also mediate translation during serum starvation and the IRES also improved XIAP-mediated inhibition of apoptosis during serum starvation. The La autoantigen was shown to be involved in translation from the IRES.

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2000005366	A2	20000203	WO 1999-IB1415	19990722
WO 2000005366	A3	20000615		
W: CA, JP, US				
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
US 6159709	A	20001212	US 1998-121979	19980724
US 6171821	B1	20010109	US 1999-332319	19990614
CA 2336707	AA	20000203	CA 1999-2336707	19990722
EP 1100900	A2	20010523	EP 1999-935002	19990722
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				

L19 ANSWER 9 OF 12 MEDLINE
AN 2002462304 MEDLINE

TI Overexpression of TIAP/m-survivin in thymocytes enhances cell proliferation.
SO MOLECULAR IMMUNOLOGY, (2002 Oct) 39 (5-6) 289-98.
Journal code: 7905289. ISSN: 0161-5890.
AU Hikita Satosi; Hatano Masahiko; Inoue Atsushi; Sekita Nobuyuki; Kobayashi Koichi; Otaki Masayuki; Ogasawara Takeshi; Okada Seiji; Hirasawa Hiroyuki; Tokuhisa Takeshi
AB **TIAP**/m-survivin, a member of the inhibitor of **apoptosis** (IAP) protein family, is expressed in a cell cycle dependent manner. It is strongly expressed in various subsets of thymocytes. To investigate a role of **TIAP**/m-survivin in thymocytes, mice carrying the lck-**TIAP** transgene were established. Two out of six transgenic mice expressed large amounts of **TIAP** mRNA and protein in thymocytes. Although T cell development and **apoptosis** of thymocytes were largely unaffected in lck-**TIAP** mice, transgenic thymocytes displayed hyperproliferation in response to PMA and ionomycin but not to anti-CD3 antibody. Thus, overexpression of **TIAP**/m-survivin augments cell proliferation of thymocytes to a certain stimulation.

L19 ANSWER 1 OF 12 MEDLINE
AN 1999145571 MEDLINE
TI Expression of a murine homologue of the inhibitor of apoptosis protein is related to cell proliferation.
SO PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA, (1999 Feb 16) 96 (4) 1457-62.
Journal code: 7505876. ISSN: 0027-8424.
AU Kobayashi K; Hatano M; Otaki M; Ogasawara T; Tokuhisa T
AB The inhibitor of **apoptosis** (IAP) proteins form a highly conserved gene family that prevents cell death in response to a variety of stimuli. Herein we describe a newly defined murine IAP, designated **Tiap**, that proved to be a murine homologue of human survivin based on sequence comparison. **TIAP** has one baculovirus IAP repeat and lacks a C-terminal RING finger motif. **TIAP** interacted with the processed form of caspase 3 and inhibited caspase-induced cell death. Histological examinations revealed that **TIAP** is expressed in growing tissues such as thymus, testis, and intestine of adult mice and many tissues of embryos. In in vitro studies, **TIAP** was induced in splenic T cells activated with anti-CD3 antibody or Con A, and the expression of **TIAP** was up-regulated in synchronized NIH 3T3 cells at S to G2/M phase of the cell cycle. We propose that during cell proliferation, cellular protective activity may be augmented with inducible IAPs such as **TIAP**.

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FILE 'MEDLINE, AGRICOLA, CANCERLIT, SCISEARCH, CAPLUS, MEDICONF' ENTERED AT 11:16:44 ON 26 JUN 2003

L1 62 S (TIAP OR XIAP) (L) ANTIBOD?
L2 21 DUP REM L1 (41 DUPLICATES REMOVED)
L3 21 FOCUS L2 1-
L4 0 S L3 AND PY<=1998
L5 7 S (BIR DOMAIN) (L) ANTIBOD?
L6 5 DUP REM L5 (2 DUPLICATES REMOVED)

=> d an ti so au ab pi l6 1-5

L6 ANSWER 1 OF 5 CAPLUS COPYRIGHT 2003 ACS
AN 2002:256459 CAPLUS
DN 136:289899
TI Use of antisense DNA to human and mouse inhibitor of apoptosis proteins as gene therapy for cancer and other cell proliferation disorders
SO PCT Int. Appl., 135 pp.
CODEN: PIXXD2
IN Korneluk, Robert G.; Lacasse, Eric; Baird, Stephen; Holcik, Martin; Young, Sean
AB The present invention feature antisense IAP (inhibitor of apoptosis protein) nucleic acids and other neg. regulators of the IAP anti-apoptotic pathway, and methods for using them to enhance apoptosis. More specifically, antisense DNA and ribozymes for inhibition of mouse and human X-linked IAP (XIAP) and human inhibitors of apoptosis namely HIAP1 and HIAP2 are provided. The said antisense DNA are between 8 and 30 nucleotides in length. Furthermore, these antisense nucleic acids contain at least one modified internucleotide linkage consisting of phosphorothioate, methylphosphonate, phophotriester, phosphorodithioate or phosphoselenate linkages. The antisense DNA may alternatively contain a modified sugar moiety such as a 2'-O-Me group. In a specific embodiment, antisense DNA residues contain a core of phosphodiester DNA residues, flanked on each side by at least 1-3 2'-O-Me RNA residues with a phosphorothioate linkage between the flanking RNA residues. The cDNA and protein sequences for two murine and two human IAP proteins, as well as for murine and human X-linked IAP are also provided. Also provided are **antibodies** that bind IAP proteins. Neg. regulators may also include IAP proteins contg. a ring zinc finger domain with no more than two **BIR domains** (baculovirus inhibitor of apoptosis repeat). Neg. regulator of apoptosis may be an anti-IAP **antibody** that prevents cleavage of the IAP protein. In addn., methods for treating diseases and disorders involving apoptosis are provided using said antisense compns. in chemotherapy.

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2002026968	A2	20020404	WO 2001-CA1379	20010927
WO 2002026968	A3	20021227		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

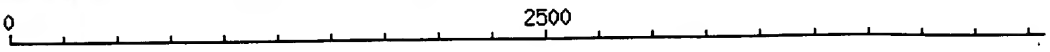
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

AU 2001093583	A5	20020408	AU 2001-93583	20010927

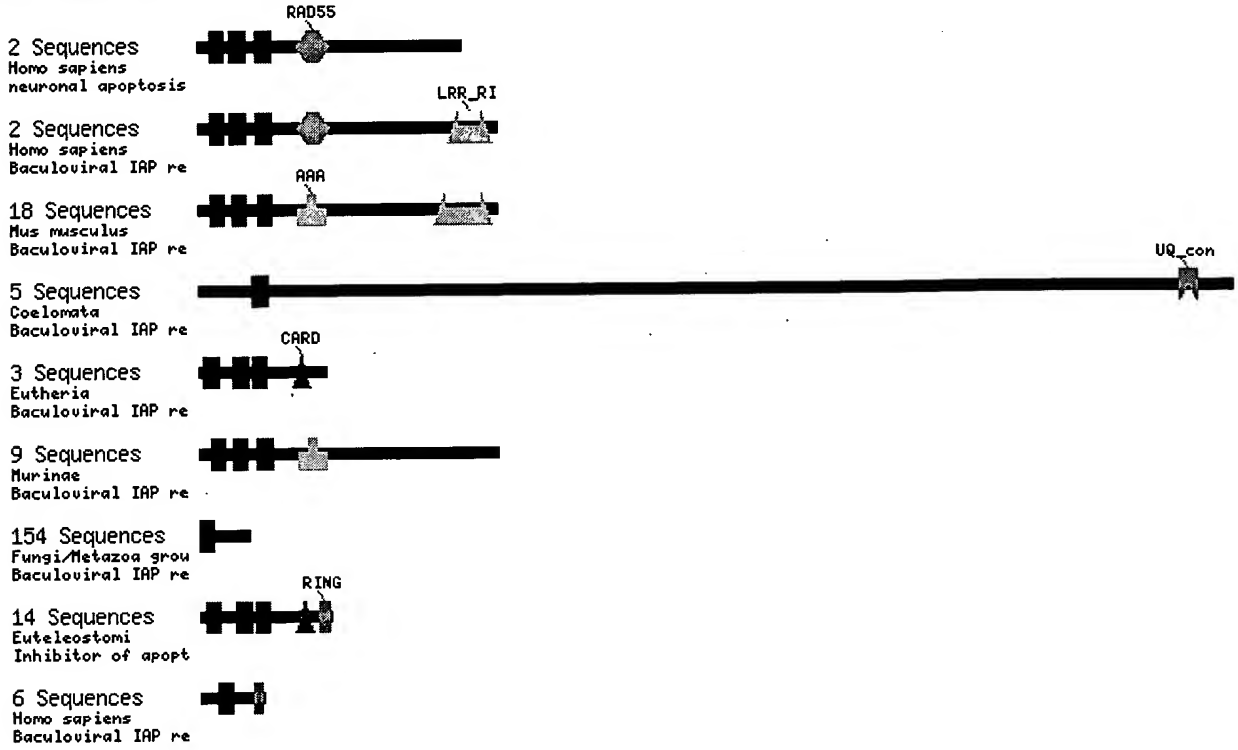
L16 ANSWER 3 OF 4 MEDLINE
AN 1998395120 MEDLINE
TI Apoptosis induced by Drosophila reaper and grim in a human system. Attenuation by inhibitor of apoptosis proteins (cIAPs).
SO JOURNAL OF BIOLOGICAL CHEMISTRY, **(1998 Sep 11)** 273 (37) 24009-15.
Journal code: 2985121R. ISSN: 0021-9258.
AU McCarthy J V; Dixit V M
AB Previous genetic studies have established Reaper and Grim as central regulators of apoptosis in Drosophila melanogaster. Reaper and Grim induce extensive apoptosis in Drosophila, yet share no homology to known vertebrate proteins. In this study, we show for the first time that ectopic expression of Reaper or Grim induced substantial apoptosis in mammalian cells. Reaper- or Grim-induced apoptosis was inhibited by a broad range of caspase inhibitors and by human **inhibitor** of **apoptosis proteins** cIAP1 and cIAP2. Additionally, in vivo **binding** studies demonstrated that both Reaper and Grim physically interacted with human IAPs through a homologous 15-amino acid N-terminal segment. Deletion of this segment from either Reaper or Grim abolished **binding** to cIAPs. In vitro **binding** experiments indicated that Reaper and Grim bound specifically to the BIR domain-containing region of cIAPs as deletion of this region resulted in loss of **binding**. The physical interaction was further confirmed by immunolocalization. When co-expressed, Reaper or Grim co-localized with cIAP1. However, deletion of the N-terminal 15 amino acids of Reaper or Grim abolished co-localization with cIAP1, suggesting that this homologous region can serve as a protein-protein interacting domain in regulating cell death. Moreover, by virtue of this interaction, we demonstrate that cIAPs can regulate Reaper and Grim by abrogating their ability to activate caspases and thereby inhibit apoptosis. This is the first function attributed to this 15-amino acid N-terminal domain that is the only region having significant homology between these Drosophila death inducers.

L Number	Hits	Search Text	DB	Time stamp
1	7	TIAP SAME apoptosis	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/06/26 11:54
7	2	TIAP SAME method.clm.	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/06/26 11:55
13	4	TIAP .clm.	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/06/26 11:55
19	31	(US-6133437-$ or US-6495339-$ or US-6472172-$ or US-6511828-$ or US-6187557-$ or US-6107041-$ or US-6228603-$ or US-6331412-$ or US-6300492-$ or US-6159709-$ or US-6171821-$ or US-5919912-$ or US-6087173-$ or US-6107088-$ or US-6156535-$).did. or (US-20020086409-$ or US-20020187946-$ or US-20020160975-$ or US-20020137028-$ or US-20020120121-$ or US-20020132786-$).did. or (WO-9835693-$ or WO-9726331-$ or EP-892048-$ or WO-9822131-$ or WO-9740847-$ or WO-9316196-$ or WO-9612016-$ or WO-9706255-$).did. or (JP-11032780-$).did. or (US-5919912-$).did.	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/06/26 11:56
25	23	((US-6133437-$ or US-6495339-$ or US-6472172-$ or US-6511828-$ or US-6187557-$ or US-6107041-$ or US-6228603-$ or US-6331412-$ or US-6300492-$ or US-6159709-$ or US-6171821-$ or US-5919912-$ or US-6087173-$ or US-6107088-$ or US-6156535-$).did. or (US-20020086409-$ or US-20020187946-$ or US-20020160975-$ or US-20020137028-$ or US-20020120121-$ or US-20020132786-$).did. or (WO-9835693-$ or WO-9726331-$ or EP-892048-$ or WO-9822131-$ or WO-9740847-$ or WO-9316196-$ or WO-9612016-$ or WO-9706255-$).did. or (JP-11032780-$).did. or (US-5919912-$).did.) and bind$4	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/06/26 11:57
-	462	BIR$5 WITH domain	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/06/25 12:48
-	51	(BIR$5 WITH domain) and iap	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/06/26 11:52
-	29	Robert WITH KORNELUK,	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/06/25 12:49
-	31	(XIAP M-XIAP HIAP$3 M-HIAP$3) SAME BIR$3	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/06/25 12:49

CDART: Conserved Domain Architecture Retrieval Tool



Similar domain architectures



Result page: Previous 1 2 Next

Subset by Taxonomy

Subset by selected domains:

☐	COG0467	RecA-superfamily ATPases implicated in signal tra...
	includes:	pfam00154 pfam03796 COG0305 COG0468 COG2874
☐	cd00162	RING-finger (Really Interesting New Gene) domain,...
	includes:	smart00504 smart00184 COG5194 pfam00097 pfam04564
☐	smart00238	Baculoviral inhibition of apoptosis protein repea...
	includes:	pfam00653 LOAD_bir cd00022
☐	pfam00179	Ubiquitin-conjugating enzyme. Proteins destined f...
	includes:	cd00195 COG5078 smart00212
☐	cd00116	Leucine-rich repeats (LRRs), ribonuclease inhibit...
	includes:	COG5238
☐	pfam00619	Caspase recruitment domain. Motif contained in pr...
	includes:	smart00114
☐	cd00009	AAA-superfamily of ATPases associated with a wide...
	includes:	pfam01695 cd00267 pfam00158 pfam03308 smart00350 pfam00308 pfam01078 pfam01495 pfam03205 smart0 COG0396 COG0410 COG0411 COG0444 COG0470 COG0523 COG0541 COG0552 COG0714 COG1101 CO COG1117 COG1118 COG1119 COG1120 COG1121 COG1122 COG1124 COG1125 COG1126 COG1127 CO COG1134 COG1135 COG1136 COG1137 COG1221 COG1222 COG1223 COG1466 COG1474 COG1485 CO COG2842 COG2884 COG3172 COG3267 COG3283 COG3604 COG3638 COG3839 COG3840 COG3842 CO

NCBI

Conserved Domain Database

PubMed Nucleotide Protein Structure CDD Taxonomy Help?

CD: pfam00653.8, BIR **PSSM-Id:** 1211 **Source:** Pfam[US], Pfam[UK]

Description: Inhibitor of Apoptosis domain. BIR stands for 'Baculovirus Inhibitor of apoptosis protein Repeat' Also known as IAP repeat.

Taxa: root **References:** 1 Pubmed Link **Related:** smart00238, cd00022, LOAD_bir

Status: Alignment from source **Created:** 11-Apr-2003

Aligned: 42 rows **PSSM:** 66 columns **Representative:** Consensus

Proteins: [Click here for CDART summary of Proteins containing pfam00653]

View 3D Structure with Cn3D using Virtual Bonds (To display structure, download Cn3D)

View Alignment as Hypertext width 60 color at 2.0 bits

Subset Rows up to 10 of the most diverse members

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                      10        20        30        40        50        60
                      ....*....|....*....|....*....|....*....|....*....|....*....|
consensus       1 RLRTFQN----------WPISNLQF-----PEQLAKAGFYYTGVGDEV------------ 33
1E31_A         18 RISTFKN----------WPFLEGCAc---tPERMAEAGFIHCPTENEPdl---------- 54
gi_1352900    153 RKFTFQDn---------WPHSGSQNehplgIEKMVNAGLMRYDSSIEGlgdpsmdktlmn 203
gi_1352900     20 RLRTFQDgvalekkklkWSFKVIPY------QAMAKLGFYFDPVIDPKtsklk------k 67
gi_2497245    129 RRATFDH----------WPAALNAL-----THDIAEAGMFHTMLGDET------------ 161
gi_1170468     32 RHSSFEN----------YPIENTAF-----INSLIVNGFKYNQVDDHV------------ 64
gi_2497246     32 RNQSFAI----------HGIKNY--------EKFSNAGFFYTSPTEIT------------ 61
gi_3875145     27 RFASFKG----------FVYDKRINia-ctSEKLARAGFYSTASPEFPas---------- 65
gi_2497244     12 RLATFGE----------WPLNAPVS-----AEDLVANGFFATGNWLEA------------ 44
gi_12643291    63 RLKTFVT----------YEPYSSWI-----PQEMAAAGFYFTGVKSGI------------ 95

                      70        80        90       100       110
                      ....*....|....*....|....*....|....*....|....*....|
consensus      34 ---RCFFCGVELKN----------WEPGDDPWEEHKRWSP---NCPFVR 66
1E31_A         55 --aQCFFCFKELEG----------WEPDDDPIEEHKKHSS---GCAFLS 88
gi_1352900    204 dtcYCIYCKQLLQG----------WSINDDPMSRHYKVSQn-gNCYFFQ 241
gi_1352900     68 dsvRCCYCHRQTYNvrdcrskrkdvLETLSNIMRQHLTVTDnkqVCLLIY 117
gi_2497245    162 ---ACFFCDCRVRD----------WLPGDDPWQRHALANP---QCYFVV 194
gi_1170468     65 ---VCEYCEAEIKN----------WSEDECIEYAHVTLSP---YCAYAN 97
gi_2497246     62 ----CYCCGMKFCN----------WLYEKHPLQVHGFWSR---NCGFMR 93
gi_3875145     66 --aKCPFCMLEIN----------FEQCDDPWEKHKSGSP---HCEFVM 98
gi_2497244     45 ---ECHFCHVRIDR----------WEYGDQVAERHRRSSP---ICSMVL 77
gi_12643291    96 ---QCFCCSLILFG----------AGLTRLPIEDHKRFHP---DCGFLL 128
```

1: Biochem Biophys Res Commun. 2003 Jan 31;301(1):236-42.

Related Articles, Links

ELSEVIER SCIENCE
FULL-TEXT ARTICLE

Molecular cloning and characterization of a novel inhibitor of apoptosis protein from Xenopus laevis.

Song K, Kim TM, Kim HJ, Kim JW, Kim HH, Kwon HB, Kim WS, Choi HS.

Hormone Research Center, Chonnam National University, Kwangju 500-757, Republic of Korea.

A novel inhibitor of apoptosis protein family member termed SIX was identified in Xenopus containing a single baculoviral IAP repeat (BIR) domain and no COOH-terminal RING finger domain. It exhibited striking amino acid sequence similarity with human survivin, mouse TIAP, and recently found Xenopus survivin, especially a part of BIR domain was highly conserved. Interestingly, SIX interacted with RXRalpha through the AF2 domain in the absence of ligand, which was weakened when the ligand was present. Northern blot analysis demonstrated that SIX mRNA was not detectable in adult with exception of the ovary and testis, and whole-mount in situ hybridization and Northern blot analyses revealed strong and homogeneous expression of SIX in the developing oocytes. In the embryos, the expression of SIX was observed in the animal hemisphere from one-cell to yolk plug stages and high level of expression was detected in the future brain and dorsal region of the neural tube at the neurula stage and early tail-bud stage. These results strongly support the fact that survivin is evolutionarily conserved in structure and SIX is likely to be the Xenopus counterpart of human and mouse survivin.

PMID: 12535669 [PubMed - indexed for MEDLINE]

1: Genome Biol. 2001;2(7):REVIEWS3009. Epub 2001 Jul 05.

Related Articles, Links

Inhibitor of apoptosis proteins and their relatives: IAPs and other BIRPs.

Verhagen AM, Coulson EJ, Vaux DL.

The Walter and Eliza Hall Institute of Medical Research, Post Office, Royal Melbourne Hospital, Victoria 3050, Australia.
verhagen@wehi.edu.au

SUMMARY: Apoptosis is a physiological cell death process important for development, homeostasis and the immune defence of multicellular animals. The key effectors of apoptosis are caspases, cysteine proteases that cleave after aspartate residues. The inhibitor of apoptosis (IAP) family of proteins prevent cell death by binding to and inhibiting active caspases and are negatively regulated by IAP-binding proteins, such as the mammalian protein DIABLO/Smac. IAPs are characterized by the presence of one to three domains known as baculoviral IAP repeat (BIR) domains and many also have a RING-finger domain at their carboxyl terminus. More recently, a second group of BIR-domain-containing proteins (BIRPs) have been identified that includes the mammalian proteins Bruce and Survivin as well as BIR-containing proteins in yeasts and Caenorhabditis elegans. These Survivin-like BIRPs regulate cytokinesis and mitotic spindle formation. In this review, we describe the IAPs and other BIRPs, their evolutionary relationships and their subcellular and tissue localizations.

Publication Types:
- Review
- Review, Tutorial

PMID: 11516343 [PubMed - indexed for MEDLINE]